



**State of Utah**  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING  
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September 27, 1996

Neal J. Mortensen  
Vice President  
Western Clay Company  
P.O. Box 127  
Aurora, Utah 84620

Dear Mr. Mortensen:

Re: Review of Notice of Intention to Commence Large Mining Operations, Western Clay Company (Western), Hebe Gypsum Mine, M/015/072, (UTU-73779), Emery County, Utah

The Division has completed a review of your Notice of Intent to Commence Large Mining Operations (NOI-LMO) submission received August 16, 1996. In addition to this, the Division has received the following documents: a copy of the BLM letter dated August 21, 1996, describing 28 items to be addressed, Western Clay's September 6, 1996, response letter, and the BLM's letter of September 10, 1996, listing six remaining items to be addressed. After reviewing this information, the Division has several comments which will require further clarification and response. The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion.

**R647-4-105 Maps, Drawings & Photographs**

**105.2 Surface facilities map**

Please provide the Division with a copy of the map which was enclosed with your September 6, 1996, response letter to the BLM. This map may satisfy our requirements for a surface facilities map if it includes all features as described under section R647-4-105.2 of the Division's rules. (AAG)

**105.3 Drawings or Cross Sections (slopes, roads, pads, etc.)**

Please provide typical cross sections of a gypsum pit area showing the configuration prior to mining and the anticipated configuration when the pit is reclaimed after mining is complete. Please provide a typical cross section of the haul road to be



constructed in the BLM right-of-way. Please provide a reclamation treatments map using the same scale as the surface facilities map. Color code or hatch the disturbed areas on this map to indicate the reclamation treatments each area is to receive. Areas shown on this map should agree with areas used in the reclamation cost estimate. (AAG)

#### **R647-4-106 Operation Plan**

##### **106.3 Estimated acreages disturbed, reclaimed, annually?**

Please provide a description of the proposed sequence of mining for a minimum of five years and a maximum of ten years into the future. This description should include an annual estimate of areas reclaimed, areas which will remain disturbed, and new disturbances created that year. We suggest that you base this description on a conservative production rate within your 35,000 to 500,000 tpy range. You may include drawings of quarry areas to help illustrate the mine sequence. (AAG)

##### **106.4 Nature of materials mined, waste & estimated tonnages**

Please provide an estimate of the annual amounts of gypsum ore and overburden to be produced corresponding with the five to ten year mine plan used in responding to section 106.3 above. (AAG)

##### **106.5 Existing soil types, location, amount**

The application does not contain a description of the existing soil types. It is indicated that a soil survey has been/is being conducted. Formal comments on this section are reserved until the soil survey is submitted. (LK)

#### **R647-4-107 Operation Practices**

##### **107.1.14 Posting warning signs**

Please describe the warning signs to be posted to minimize safety hazards to the public or describe why these signs are not necessary. (AAG)

##### **107.1.15 Constructing berms, fences, etc. above highwalls**

Please describe any berms or fences to be installed above pit highwalls, or describe why these features are unnecessary to minimize safety hazards to the public. (AAG)

##### **107.2 Drainages to minimize damage**

The application outlines what appears to be two major drainage crossings. One drainage will be crossed by installing a culvert and the other using boulders as fill. Unless properly designed and installed, the use of a culvert or placement of boulders

in an ephemeral desert stream channel could result in an eventual erosional failure. Division experience within this hydrologic environment indicates that storms are generally infrequent. When storms do arrive, they are usually very intense and move a lot of material/debris down the channel. This material could block a culvert, or breach a boulder fill which could result in a failure of the structure. A culvert would need to be oversized and any fill (or boulders) placed in the drainage would need to be properly engineered and keyed into the channels bed and banks. The size of the contributing watershed area and peak flow calculations must be supplied to allow us to verify proper culvert sizing. This information is necessary to determine whether the appropriate storm size was selected to size flows that the culvert would have to pass. Please supply the necessary hydrologic calculations and design drawings depicting these crossings.

A possible alternative crossing could be created by cutting/dozing a controlled slot through the channel embankments and across the bed, thereby allowing vehicular traffic to access the mine site. This crossing would create no restrictions or blockages of the channel during operations. Once mining operations cease, the channel embankments could be restored to their approximate original contour. Routine road maintenance would be simplified as well. (TM)

#### **107.3 Erosion control & sediment control**

Erosion control tends to be a unique situation in this highly erosion environment. Nature has provided either desert pavement or cryptogamic soils as a means of stabilizing the soils in the desert. Consequently, when these natural soil protectors are disturbed, erosion is basically unchecked. Therefore, the Division will require that any stockpiled topsoil or cryptogamic soils be bermed, vegetated, netted, tackified (or otherwise secured) to minimize the loss of soil from water and wind erosion. Please provide a plan describing the control measures to be provided in this regard. When regrading and reclaiming disturbed areas, special attention should be given to leaving the soil in a roughened condition and providing some form of soil protection (e.g., desert pavement/gravel mulch, soil tackifier, etc.) to minimize surface erosion until vegetation becomes established. (TM)

#### **107.4 Deleterious material safely stored or removed**

The September 6, 1996, letter to the BLM states a 500 gallon portable fuel tank will be located on site. Will this be for diesel fuel or gasoline? Will this tank be located onsite for the duration of the mine life or will this be a tanker truck which stays at the site only during times of active mining? Any fuel tank left onsite should be located within a containment berm (preferably lined) of sufficient size to contain any fuel spills due to leakage or failure of the tank. (AAG)



**107.5 Suitable soils removed & stored**

Until the soil survey information and plans for soil storage and removal are submitted, this section cannot be evaluated. (LK)

**107.6 Concurrent reclamation**

The application does not contain any information regarding plans for concurrent reclamation. Concurrent reclamation appears feasible. Direct haulage of topsoils salvaged from newly stripped areas to recently regraded areas could be accomplished given our present understanding of the proposed mining scenario. Please provide details regarding concurrent reclamation if it can be accomplished under the proposed mine plan. This information should address the timing of how reclamation of disturbed areas will be accomplished and in what manner soils will be stripped and saved. Please provide a sequential mine plan of how the gypsum deposit will be developed over time. (TM)

**R647-4-108 Hole Plugging Requirements**

Any dry drill holes which are not mined through at the end of operations will need to properly plugged according to the requirements of this rule. (AAG)

**R647-4-109 Impact Assessment**

**109.2 Impacts to threatened & endangered wildlife/habitat**

As per a letter dated September 10, 1996, to Mr. Fred Mortensen from the BLM, the endangered Wrights fishhook cactus was found on the proposed project site. Avoidance and/or mitigation will be required as outlined in the correspondence and will need to be included as part of the operation plan. (LK)

**109.3 Impacts on existing soil resources**

See comments under R647-4-107.5 above. (LK)

**R647-4-110 Reclamation Plan**

**110.2 Roads, highwall, slopes, drainages, pits, etc. reclaimed**

Please describe the reclamation treatments proposed for mine features such as roads, pit highwalls, pit floors, waste dump slopes, etc. The Division prefers that all compacted areas such as roads, pads and pit floors be ripped to a minimum depth of 12 inches prior to replacing overburden or soils. The Division prefers regraded dump slopes to be at an angle of 3H:1V or less, prior to the placement of overburden or topsoil material. Please describe the reclamation treatments proposed for drainage

diversions or culverts which were needed during operations, but will be removed at the time of final reclamation. (AAG)

**110.3 Description of facilities to be left(post mining use)**

Based upon the information received, it appears that all mining features at this site will be reclaimed. Please confirm this or describe those features/facilities which are proposed to remain after final reclamation is complete. Features which are proposed to remain may need to be included in a variance request as described under section R647-4-112. (AAG)

**110.5 Revegetation planting program**

The application does not contain a revegetation plan. At a minimum, this plan needs to identify the species and rate for revegetation, how the seed bed will be prepared, how seeding will be performed (i.e., drilling, broadcasting, etc.), timing for each step in the reclamation plan, and types and amounts of soil amendments and fertilizers that will be used (if needed). Attached is a recommended seed mix that is acceptable to DOGM for use in protecting the topsoil stockpiles (if needed) and final revegetation. (LK)

**R647-4-111 Reclamation Practices**

**111.2 Reclamation of natural channels**

There currently is no discussion regarding the final reclamation of impacted drainages other than a statement that they will be returned to their native state. Please provide a cross section(s) of the drainages depicting their native state. All culverts and fill material must be removed from affected drainages and the original channel contours restored. (TM)

**111.3 Erosion & sediment control**

Please refer to comments under R647-4-107.3 above. (TM)

**111.12 Topsoil redistribution**

The plan discusses removal of approximately 1 inch of cryptogamic soils and re-applying them at the time of reclamation. Please note, all overburden replacement and regrading should be completed before this soil material is replaced. The final surface should be left in a rough condition to promote water retention for plant use. (LK)

**111.13 Revegetation-adaptable species**

Please refer to comments under R647-4-110.5 (LK)

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**R647-4-112 Variance**

The application received by the Division indicates no variances are requested at this time. This means all applicable portions of sections R647-4-107 Operation Practices, R647-4-108 Hole Plugging Practices, and R647-4-111 Reclamation Practices of the Minerals Rules will be complied with at this operation. (AAG)

**R647-4-113 Surety**

This application included a reclamation cost estimate totaling \$30,000. The Division cannot validate this estimate until the additional information requested in this letter has been received. The total amount of surface disturbance as described in the requested five to ten year mine plan will have a considerable effect on the amount of reclamation surety which the Division will require. The Division will coordinate with the BLM to avoid duplication of reclamation surety and satisfy both agencies. One form and amount of reclamation surety acceptable to both agencies is our desired outcome. (AAG)

**R647-4-115 Confidential Information**

No information in this submission was identified as confidential. (AAG)

We will suspend our review until your response to this letter is received. Please be advised that after reaching tentative approval, the Division must publish notice initiating a 30-day public comment period. After the public comment period, the Division will present the amount and form of reclamation surety to the Board of Oil, Gas and Mining for approval at one of their regularly scheduled monthly hearings. Final approval would be issued by the Division after the Board accepts the amount and form of reclamation surety.

Thank you for your cooperation in completing this permitting action. If you have any questions in this regard please contact me, Tony Gallegos, Lynn Kunzler, or Tom Munson of the Minerals staff.

Sincerely,



D. Wayne Hedberg  
Permit Supervisor  
Minerals Reclamation Program

jb

attachment: seed mix recommendation

cc: Neil Simmons, BLM San Rafael RA  
Mary Ann Wright, DOGM Associate Director  
m15-72.let

Recommended Revegetation Species List  
for

Western Clay Company  
Hebe Gypsum Mine  
M/015/072

<u>Common Name</u>	<u>Species Name</u>	<u>*Rate lbs/ac (PLS)</u>
'Hycrest' crested wheatgrass	<u>Agropyron cristatum 'hycrest'</u>	1.0
Intermediate wheatgrass	<u>Agropyron intermedium</u>	2.0
Indian ricegrass	<u>Oryzopsis hymenoides</u>	2.5
Yellow sweetclover	<u>Melilotus officinalis</u>	0.5
Scarlet globemallow	<u>Sphaeralcea coccinea</u>	0.5
4-wing saltbush	<u>Atriplex canescens</u>	1.0
Shadscale	<u>Atriplex confertifolia</u>	1.0
Forage kochia	<u>Kochia prostrata</u>	0.5
Total Seed		9.0 lbs/ac

\*\* This seed recommendation was discussed with Mr. Neil Simmons of the BLM. The BLM will accept these recommendations.

Prepared by DOGM September 20, 1996